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(54) Wafer fabrication data acquisition and management systems

(57) The present invention provides a semiconductor processing device (800) including a tool (802) having one or more sensors, a primary data communication port (804) and a secondary data communication port (806). A sensor data acquisition subsystem (808) acquires sensor data from the tool via the secondary port (806). The data acquisition subsystem (808) acquires MES operation messages via the primary port (804). Sensor data are communicated to a sensor processing unit (828) of a sensor data processing subsystem (810). The sensor processing unit (828) processes and analyzes the sensor data. Additionally, the processing unit (828) can be adapted for making product or processing related decisions, for example activating an alarm if the process is not operating within control limits. In another embodiment, the present invention provides a method and apparatus for processing data from a wafer fab facility (1000) including a plurality of tools (1004-1010) each having a primary data communication port (1012-1018) and a secondary data communication port (1042-1048).

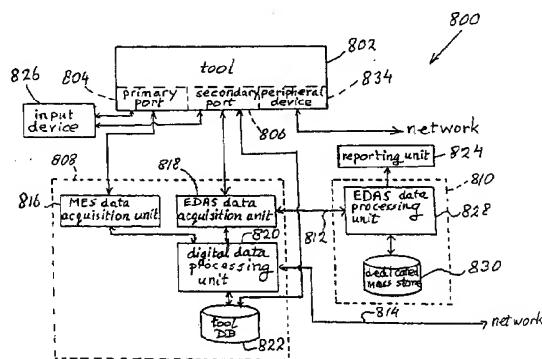


Fig. 8



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## EUROPEAN SEARCH REPORT

Application Number  
EP 01 10 4512

| DOCUMENTS CONSIDERED TO BE RELEVANT   |   |                                   | CLASSIFICATION OF THE APPLICATION (Int.Cl.) |  |  |
|---|---|-----------------------------------|---|--|--|
| Category  | Citation of document with indication, where appropriate, of relevant passages                               | Relevant to claim                 |   |  |  |
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| Y   | * abstract *  |                                   |   |  |  |
| Y   | * column 3, line 36 - column 4, line 29;<br>figure 2 *  | 8-10,<br>15-17                    |   |  |  |
| A   | * column 5, line 5 - line 19 *  | 11,<br>19-25,27                   |   |  |  |
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| A   | * column 2, line 40 - line 46 *   |                                   |   |  |  |
| A   | * column 3, line 38 - column 4, line 40;<br>figure 1 *  | 1-6,14,<br>19-27                  |   |  |  |
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| X   | * column 1, line 65 - column 2, line 30 *<br>* column 5, line 2 - column 9, line 34;<br>figures 1,1a,3-3c * | 18,28,29                          | TECHNICAL FIELDS<br>SEARCHED (Int.Cl.)      |  |  |
|   | -----   |                                   | G05B<br>H01L                                |  |  |
| The present search report has been drawn up for all claims  |   |                                   |   |  |  |
| Place of search   | Date of completion of the search  | Examiner                          |   |  |  |
| The Hague   | 11 October 2004   | Salvador, D                       |   |  |  |
| CATEGORY OF CITED DOCUMENTS   |   |                                   |   |  |  |
| X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document   |   |                                   |   |  |  |
| T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>.....<br>& : member of the same patent family, corresponding document |   |                                   |   |  |  |

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 10 4512

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
 The members are as contained in the European Patent Office EDP file on  
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11-10-2004

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